Claims

1. Operating method for an automated language recognizer for speaker-independent language recognition of words (10) from different languages, particularly for the recognition of names from different languages, that is based on a language defined as a mother tongue and has an input phase for creating a language recognition vocabulary, with the following steps:
(a) Determination of the phonetic transcripts of words for N various languages, in order to obtain N first phoneme sequences (12) per word corresponding to N first pronunciation variants (S1),
(b) Implementing a mapping of the phonemes of each language to the relevant phoneme set of the mother tongue (S2).
(c1) Using the mapping implemented in step (b) to the N first phoneme sequences (12) for each word determined in step (a), whereby for each word N second phoneme sequences (14) corresponding to N second pronunciation variants are obtained, that can be recognized by means of a mother tongue language recognizer (S3),
(d) Creation of a language recognition vocabulary with the N second phoneme sequences per word, obtained in the preceding step, for the mother tongue language recognizer (S6).

2. Operating method in accordance with Claim 1, further characterized by the following steps, to be performed before step (d) and after (c1):
(c2) Processing the N second phoneme sequences (14) corresponding to the N second pronunciation variants of each word, in that
(c21) each second phoneme sequence (14) is analyzed and classified (S4) by means of suitable distances, particularly the Levenshtein distance, and
(c22) the N second phoneme sequences of each word are reduced to a few, preferably two to three, phoneme sequences (S5).

3. Operating method in accordance with Claim 1 or 2, characterized in that
before step (a) a language identification is carried out by means of which, for each word to be recognized, the probability of belonging to each of the N different languages is determined and, based on the results of the language identification, the number of languages to be processed in step (a) is reduced, preferably to 2 to 3 different languages, in that the languages with the least probability are not further processed (S0).

4. Operating method in accordance with one of Claims 1 to 3, characterized in that
the determination of the phonetic transcripts in step (a) takes place by means of at least one neural network.

5. Operating method in accordance with one of Claims 1 to 4, characterized in that
a Hidden Markov model that has been created for the language defined as the mother tongue is used as the mother tongue language recognizer.

6. Automatic language recognizer for speaker-independent language recognition of words from various languages, particularly for recognition of names from various languages, whereby one of the different languages is defined as the mother tongue, with
- a mother tongue language recognizer,
- a first processing module for determining the phonetic transcripts of words for N various languages in each case, in order to obtain N first phoneme sequences for each word corresponding to N first pronunciation variants,
- a second processing module for implementing a mapping of the phonemes of each language to the particular phoneme set of the mother tongue,
- a third processing module for applying the mapping, implemented by means of the second processing module, to

the N first phoneme sequences for each word determined by means of the first processing module, with N second phoneme sequences corresponding to N second pronunciation variants being obtained per word, that can be recognized by means of the mother tongue language recognizer, and

- a fourth processing module for creating a language recognizable vocabulary with the N second phoneme sequences per word, obtained by the third processing module, for the mother tongue language recognizer.

7. Automatic language recognizer in accordance with Claim 6, characterized in that
a fifth processing module for processing the N second phoneme sequences corresponding to the N second pronunciation variants of each word is designed in such a way that each second phoneme sequence is analyzed and classified by means of suitable distances, particularly the Levenshtein distance, and the N second phoneme sequences of each word are reduced to a few, preferably 2 to 3, phoneme sequences.

8. Automatic language recognizer in accordance with Claim 6 or 7,
characterized by
a language identifier that is connected before the first processing module and, for each word to be recognized, determines the probability of belonging to each of the N different languages, and a language reducer that reduces the number of languages from the first processing module to be processed, preferably to 2 to 3, in that the languages with the least probability are not further processed.

9. Automatic language recognizer in accordance with one of Claims 6 to 8,
characterized in that
the first processing module has at least one neural network for determining the phonetic transcripts.

10. Automatic language recognizer in accordance with one of Claims 6 to 9,
characterized in that
the mother tongue language recognizer has a Hidden Markov model that has been created for the language defined as the mother tongue.

11. Use of the operating method in accordance with one of Claims 1 to 5 and of the automatic language recognizer in accordance with one of Claims 6 to 10 in a mobile device such as a mobile telephone, personal digital assistant or personal computer.